DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION AND MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA 35898.5000

30 Mar 01 R-3
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15 Dec 00 R-l
20 Jul 00

AMSAM-RD-AE-I-D-U (70-62a)

MEMORANDUM FOR Commander, U.S. Army Aeromedical Research Laboratory, ATTN: MCMR-UAD, Fort Rucker, AL 36332

SUBJECT: Airworthiness Release (AWR) for MEDEVAC UH-60A Helicopters Equipped with the Physio Control Lifepak lO-59PMI, NSN 6515-01-480-9614, and Lifepak 10-62PMI, NSN 6515-01-481-0245, Defibrillator/Monitor, the DNI-Nevada Patient Simulator, the Alaris MedSystem III Infusion Pump 2863B or 2865B, the BCI 3303 Pulse Oximeter, the Impact 754 Ventilator, Impact Portable Aspirator Model 325M, Impact Portable Suction System Model 326/326M, Unitron Portable Power System, 60 Hertz (Hz) Converter Adapter Plate, and Propaq lO6EL/206EL Vital Signs Monitor (AWR 907)

1. References:

a. Technical Manual 1-1520-237-10, 31 Oct 96, with all changes, Operator's Manual UH-60A/L Helicopter.

b. Memorandum, United States Army Aeromedical Research Laboratory, MCMR-UAD, 31 May 00, subject: Request for Airworthiness Release (AWR).

c. Memorandum, U.S. Army Aeromedical Research Laboratory, MCMR-UAD, 14 Sep 00, subject: Request an Airworthiness Release (AWR) for the U.S. Army UH-60A MEDEVAC Fleet for Carry On Medical Life Support Equipment, IVAC MedSystem III Infusion Pump 2863B.

d. Letter, Alaris Medical Systems, Inc., 14 Nov 00.

e. Memorandum, U.S. Army Aeromedical Research Laboratory, MCMR-UAD, 27 Nov 00, subject: Request for U.S. Army UH-60A MEDEVAC Fleet Airworthiness Release (AWR) for the BCI 3303 Pulse Oximeter and Impact 754 Ventilator Carry-On Medical Life Support Equipment.

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f. Memorandum, U.S. Army Aeromedical Research Laboratory, MCMR-UAD, 8 Dec 00, subject: Request an Airworthiness Release (AWR) for the u.s. Army UH-60A MEDEVAC Fleet for Carry-On Medical Life Support Equipment of the Impact Portable Aspirator Model, 325M Impact Portable Suction System, Model 326/326M.

g. Memorandum, U.S. Army Aeromedical Research Laboratory, MCMR-UAD, 27 Jan 01, subject: Request an Airworthiness Release (AWR) for the U.S. Army UH-60A MEDEVAC Fleet, for Carry-On Medical Life Support Equipment of the Propaq lO6EL Vital Signs Monitor and the 206EL Vital Signs Monitor.

h. Operating Instructions, Physio Control, Lifepak 10 Defibrillator/Monitor/Pacemaker.

i. Manual, DNI-Nevada, Impulse 4000 Defibrillator and Transcutaneous Pacer Analyzer.

j. Technical Service Manual, Alaris Medical Systems, MedSystem III Infusion System.

k. Manual, BCI International, Feb 97, Version 5, BCI 3303 Oximeter Clinician's Operation Manual.

l. Manual, Impact Instrumentation, Inc., Feb 97, Revision 1.83, Operation Manual, Portable, Self-Contained Ventilation System (Ventilator, Compressor, Air/Oxygen Mixer), Uni-Vent Eagle 700 Series Model 754/754/M.

m. Manual, Impact Instrumentation, Inc., Jan 89, Rev. 0, NSN 6515-01-284-8704, Model 325M Operator's Manual.

n. Manual, Impact Instrumentation, Inc., Aug 99, Rev. D, P/N 906-0326-03, Contract No. VA797-98-F1-0013, Instruction Manual, Operation & Service, 326M Series, Suction Apparatus, Surgical, and Gastrointestinal Abdominal Drainage, Portable, AC/DC/Rechargeable Battery.

o. Manual, Unitron Incorporated, Installation and Operation Manual for Model PS-94-444-12 Medi-Vac Portable Power System, P/N 80-17001-1, November 1997.

p. Manual, Protocol Systems, Inc., Propaq User's Guide, Models 102, 104, 106, lO2EL, lO4EL, lO6EL, Software Version 8, English Language.

q. Checklist, U.S. Army Aviation Technical Test Center, Qualitative Electromagnetic Compatibility (EMC) Checklist, JUH-60 Aircraft, (Enclosure 1).

2. This memorandum constitutes an AWR in accordance with (IAW) Army Regulation (AR) 70-62 for the purpose of authorization to operate MEDEVAC UH-60A helicopters equipped with the Physio Control Lifepak 10-59PMI, NSN 6515-01-480-9614, and Lifepak 10-62PMI, NSN 6515-01-481-0245, Defibrillator/Monitor, the DNI-Nevada patient simulator, the Alaris MedSystems III Infusion Pump 2863B or 2865B, the BCI 3303 Pulse Oximeter, the Impact 754 Ventilator, Impact Portable Aspirator Model 325M, Impact Portable Suction System Model 326/326M, Unitron Portable Power System, and Propaq 106EL/206EL Vital Signs Monitor as requested in references 1b through 1g.

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CAUTION

Any deviation from the installation and operation instructions as stated herein is not authorized. Deviation from or violation of instructions shall void this AWR.

NOTE

This AWR does not render invalid any other AWRs currently covering MEDEVAC UH-60A helicopters. Any interference (physical or operational) between this equipment and other installations shall be reported prior to flight to Headquarters, U.S. Army Aviation and Missile Command, ATTN: AMSAM-RD-AE-I-D-U, Mr. Roger Clark, DSN 897-5199 or commercial (256) 313-5199.

3. Configuration:

a. The basic UH-60A helicopter is defined in reference 1a and this AWR.

b. The Physio Control Defibrillator/Monitor Model Lifepak 10-59PMI, NSN 6515-01-480-9614, and Lifepak 10-62PMI, NSN 6515-01-481-0245, are described in reference 1h.

c. The DNI-Nevada Model Impulse 4000 Defibrillator and Transcutaneous Pacer Analyzer (patient simulator) is described in reference 1i.

d. The Alaris MedSystem III Infusion Pump 2863B or 2865B is described in reference 1j.

e. The BCI 3303 Pulse Oximeter is described in reference 1k.

f. Impact 754M Ventilator is described *in* reference 1l.

g. The Impact Portable Aspirator Model 325M is described in reference lm.

h. The Impact Portable Suction System Model 326/326M is described in reference 1n.

i. Installation of the Unitron, Inc., Model PS-94-444-12 Medi-Vac Portable Power System shall be IAW reference 1o. The unit shall be mounted to a 1/4" aluminum adapter plate attached to the cabin floor between the side-facing seats at station 280 when 115 volt 60 Hz power is needed for the operation of aeromedical equipment. The Unitron Model PS-62-66D 60 Hz converter may also be mounted to the adapter plate.

j. The Propaq lO6EL/206EL Vital Signs Monitor is described in reference lp.

k. All added cables shall be routed and clamped in such a way that assures protection from physical abuse, i.e., being stepped on, door slammed on or hung from as a handhold, and which prevents them from becoming a tripping hazard to personnel. Particular attention shall be given to adequate

bonding or neutral wires and wire shields. The cables shall be adequately protected from vibration, chafing, or stretching. Do not clamp cables to control tubes or cables, fuel lines, hydraulic lines, etc.

4. Operations and Restrictions:

a. The flight envelopes, operating instructions, and limitations for the UH-60A helicopter shall be IAW reference 1a and this document. If there is a conflict between reference 1a and the AWR, this AWR shall prevail.

b. The Physio Control Defibrillator/Monitor Model Lifepak 10-59PMI, NSN 6515-01-480-9614, and Lifepak 10-62PMI, NSN 6515-01-481-0245, shall be operated IAW reference 1h.

c. A weight and balance form must be executed or be on file per AR 95-1.

d. The DNI-Nevada Model Impulse 4000 Defibrillator and Transcutaneous Pacer Analyzer shall be operated IAW reference 1i.

e. The Alaris MedSystem III Infusion Pump 2863B or 2865B shall be operated IAW reference 1j.

f. Operation of the BCI 3303 Pulse Oximeter shall be IAW reference 1k.

g. Operation of the Impact 754M Ventilator shall be IAW reference 1l.

h. Operation of the Impact Portable Aspirator Model 325M shall be IAW reference 1m.

i. Operation of the Impact Portable Suction System Model 326/326M shall be IAW reference 1n.

j. Operation of the Unitron Portable Power System shall be IAW reference 1o.

k. Operation of the Propaq lO6EL/206EL Vital Signs Monitor shall be IAW reference 1p.

l. The aeromedical equipment shall be tied down with cargo straps during takeoffs, landings, and flight during which "loose" equipment could become a hazard to personnel.

WARNING

Breakaway of the aeromedical equipment and mounting systems from their attachments in the event of an accident *is* possible. Even when properly installed and maintained IAW this AWR, these systems are airworthy, but not crashworthy; therefore, personnel occupying the cabin area are subject to severe injury and potential death should the equipment breakaway from its attachments.

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WARNING

In a hard landing or crash sequence, the aeromedical equipment could break free from their attachments and become a source of severe injury.

WARNING

Do not defibrillate a wet or bleeding patient while aboard the aircraft without insulating the patient from all possible airframe ground points.

WARNING

Do not operate the AN/ARS-6 Personnel Locator System (PLS) and the Lifepak lO-59PMI in pacing mode at the same time.

WARNING

The Alaris Infusion Pump 2863B or 2865B shall only be operated in battery mode while aboard the aircraft.

CAUTION

Do not operate the Lifepak lO-59PMI or Lifepak lO-62PMI without a full complement of batteries installed.

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CAUTION

Exposure to High Intensity Radiated Fields (HIRF) below HIRTA message levels can cause abnormal operation of commercial medical equipment. Report any medical equipment abnormalities, locations and distances from emitters to AMSAM-RD-AE-I-D-U, ATTN: Mr. Roger Clark at DSN 897-5199 or commercial (256) 313-5199.

CAUTION

Install the "blackout curtain" when medical evacuation operations require "blackout conditions".

CAUTION

The effective reception range of the AN/ARC-186 and AN/ARC-20l radios may be reduced when the Alaris Infusion Pump 2863B or 2865B *is* in operation.

NOTE

Do not operate the Impact 754M Ventilator in the forward position while operating the AN/ARC-20l radio for critical communication.

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m. The night vision goggles (NVG) compatibility of nonstandard, especially commercial, equipment may not be controlled or even specified by the manufacturer; therefore, before any other nonstandard equipment is operated during NVG flight, the equipment must successfully pass the NVG evaluation contained in paragraph 5g.

5. Special Inspections and Instructions:

a. In addition to normal inspections, a qualitative Electromagnetic Compatibility (EMC) test IAW reference 1q shall be conducted prior to first flight of the newly installed equipment to demonstrate that the newly installed equipment (including any test instrumentation) does not serve as sources or victims of electromagnetic interference with the existing electrical/electronic subsystems. This shall be accomplished by monitoring the performance of all new and existing subsystems as the individual subsystems are operated in-turn. The operation of this equipment must include a power-on/power-off cycle, initializing or warm-up (if applicable}, and all modes of operation. All equipment shall be in the "in flight" configuration and shall be operated using aircraft generated power. The flight test portion of the EMC test shall be conducted under day Visual Flight Rules (VFR) conditions. Any EMC anomalies shall be reported by telephone to Headquarters, u.s. Army Aviation and Missile Command (USAAMCOM), ATTN: AMSAM-RD-AE-I-D-U, Mr. Roger Clark, DSN 897-5199 or commercial (256) 313-5199, prior to next flight. The aircraft shall not be considered airworthy unless the tests demonstrate that the newly installed equipment (including any test instrumentation) does not serve as sources (initiators) or recipients of

electromagnetic interference. In addition to any phone report, a letter report confirming completion of EMC test will be submitted to Headquarters, U.S. Army Aviation and Missile Command (USAAMCOM), ATTN: AMSAM-RD-AE-I-D-U, not more than 10 days after the test.

b. A daily visual inspection shall be made of the subject installation to ensure that there is no loss of security and that no damage to the host helicopter exists. Any occurrence of the preceding shall be corrected prior to further flight operations.

c. This Command has no responsibility for establishing or maintaining any logistics support for the nonstandard equipment or system installation. Any/all logistics support required to be provided for such equipment/system installation must be established and maintained by the operating unit with appropriate, locally established, support activities. Parts needed for this modification may not be available in the supply system. Your activity/facility must locally procure/manufacture the modification parts {plus any additional spare parts). This Airworthiness Release is not authorization to procure any material or sources "Sole Source.”

d. In the event any operating limit is exceeded in addition to the normal entry on DA Form 2408-13, appropriate inspection plus special inspection for security and condition of modifications shall be performed prior to next flight. Any incident or malfunction of the aircraft suspected of being related to these configuration modifications shall be reported

immediately to this Headquarters, ATTN: AMSAM-RD-AE-I-D-U, Mr. Roger Clark, DSN 897-5199 or commercial (256) 313-5199.

e. This helicopter shall be returned to standard configuration prior to transfer or turn-in to an overhaul facility.

f. The aircraft shall be inspected and maintained IAW all applicable maintenance manuals and associated Maintenance Advisory and Safety of Flight Messages. Any discrepancies shall be evaluated/repaired prior to the next flight to ensure continued airworthiness of the helicopter.

g. Prior to conducting any night vision aided flights, an evaluation of the acceptability of the new cockpit equipment with AN/AVS-6 night vision goggles shall be conducted. At night, locate the aircraft in an area of low ambient light, set interior lighting for NVG operations, and prepare the NVG for use. Check for blooming of the NVG, light leaks, and reflections utilizing the following methods. Failure to meet the criteria below will require restricting the aircraft from NVG flights:

(1) With the new equipment lighting off, scan the outside scene with the NVG. Note the scene resolution obtained. Turn on the new equipment lighting for NVG use and scan the outside scene again, noting the scene resolution. A perceptible DECREASE in scene resolution indicates the new equipment is unacceptable for NVG flights.

(2) With the unaided eye, look for reflections cast on the windscreen. Observe any reflections seen through the NVG. An NVG acceptable light source will allow NVG aided vision through its reflection. If the new equipment light reflection blocks NVG aided vision, the light source is unacceptable for use during NVG flight.

(3) Scan the cockpit for light leaks and blooming of the NVG. Light sources which cause *excessive* blooming of the NVG will be unacceptable for NVG flight. Any light leaks must be remedied prior to NVG flight.

h. For DA Form 1352 reporting purposes, application of this Airworthiness Release shall not cause the aircraft to be reported as Partially Mission Capable (PMC) .Aircraft that are nonstandard configured and operating under this release may be reported as Fully Mission Capable (FMC) .

i. Unit commanders are responsible for training on operation of subject equipment and any aircraft unique training required as a result of subject equipment installation.

6. Aircraft Logbook Entries:

a. In accordance with Department of the Army (DA) Pamphlet (PAM) 738-751, the following entries shall be made on the DA Form 2408-13-l/2408-13-l-E and shall be perpetuated on each form during the period of installation or until superseded by another Airworthiness Release, or until reason for limitation is removed.

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(1) Place a circled red "X" in the Status block IAW DA PAM 738-751. In the Faults/Remarks block, make the following entry: "Operate within limitations and restrictions specified in the enclosed Airworthiness Release dated **30 Mar 01**."

(2) Place a red dash in the Status block to be followed in the Faults/Remarks block with "One-time EMC test required prior to the first flight with new equipment installed IAW the enclosed Airworthiness Release dated **30 Mar 01**."

(3) Place a red dash in the Status block to be followed in the Faults/Remarks block with the following entry: "Perform daily visual inspection required by the enclosed Airworthiness Release dated **30 Mar 01**."

{4) Place a red dash in the Status block to be followed in the Faults/Remarks block with the following entry: "Night vision goggles check prior to next flight using NVG required by the enclosed Airworthiness Release dated **3O Mar 01**."

(5) The remaining blocks in the Fault Information block will be completed per DA PAM 738-751.

b. An exact copy of this AWR describing the operating procedures, limitations, and restrictions will be inserted in the aircraft logbook and another copy inserted in the Aircraft Historical Record File.

c. The aircraft DA Form 2408-15/2408-15-E shall be annotated to reflect the successful completion of the EMC test and to cite this Airworthiness Release by subject and date.

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The -15/-15-E need to be annotated to reflect temporary installations, as well as, permanent changes to configuration.

7. This Airworthiness Release is terminated upon transfer of the helicopter, changes in configuration of the subject equipment, or upon completion of testing.

8. If the configuration of this helicopter is changed by the application of a Modification Work Order (MWO) subsequent to the installation of the equipment described by this AWR, the compatibility of the nonstandard (AWR) equipment with the standard (MWO) equipment may result in either physical or electrical conflict. An MWO takes precedence over an AWR because the equipment becomes standard for fleet wide use. When an approved MWO is applied to this aircraft during the existence of the AWR, additional testing and/or analysis may be required to support compatibility of standard and non-standard equipment. If interference occurs, please contact AMSAM-RD-AE-I-D-U, ATTN: Mr. Roger Clark at DSN 897-5199 or commercial (256) 313-5199 prior to MWO/AWR application for direction.

9. The point of contact for this AWR is Mr. Roger Clark, AMSAM-RD-AE-I-D-U, DSN 897-5199 or commercial (256) 313-5199.

Encl
as

BARRY J. BASKETT
Director of Aviation Engineering